

**STATEMENT OF**

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Thank you for granting me this opportunity to speak to you today. My name is David Finkelstein, and I am Senior Vice President of SkyBridge, which is a U.S. company proposing to bring interactive broadband telecommunications to the entire globe. SkyBridge plans to establish a network of 64 satellites in low-earth orbit to provide fiber optic-like connectivity to almost all areas on earth; we will provide Internet access, multimedia services, videoconferencing, and other advanced communications applications. SkyBridge has obtained financial and strategic backing from several major players in the satellite and communications industries, including Alcatel, Loral, Toshiba, Sharp and Mitsubishi.

But I am not really here to talk about SkyBridge. I am here to make you aware of the tremendous potential of the satellite technologies being pioneered by SkyBridge and several others in the satellite industry, including Teledesic and Celestri. As we usher in the new Millennium, these technologies promise to bring about a dramatic advance in the way we view the quality, availability and accessibility of broadband telecommunications infrastructure in the United States and around the world.

I would like to talk to you about how exciting new satellite technologies can provide three major benefits to Americans and to citizens of the world:

- First, the availability of broadband telecommunications to literally everyone;
- Second, the opportunity to create true competition and universal service in local telecommunications; and
- Third, increased services through efficient use of that scarce resource, radio frequency spectrum.

## **I. Broadband Capacity for All**

I start with a simple, virtually unchallengeable proposition: access to telecommunications networks for the transmittal of voice and data communications has brought immense benefits to individuals and businesses. The enhancement of our day-to-day lives, and the enrichment of our social, economic and educational welfare, that have accompanied the recent growth in access to telecommunications services and the proliferation of global communications over the Internet and wide-area corporate networks, are facts to be celebrated by us all.

But even as we celebrate, we must be cognizant that not all is rosy in this picture. The truth of the matter is that our increased access to telecommunications infrastructure and bandwidth has occurred in a discriminatory manner. I am not just talking about economic discrimination between the haves and the have-nots. Certainly, this form of discrimination does exist, and is being addressed. What I am talking about is actually a more prevalent form of discrimination, one that threatens to render meaningless, for millions of Americans, programs such as Universal Service. I am speaking of geographic discrimination.

The terrestrial, wire-based telecommunications network that today serves as the backbone for the lion's share of voice and data communications in the United States either does not extend to numerous geographic areas, or serves those areas inadequately. The reasons why we have unserved and underserved areas in the U.S. and around the globe are complex, but basically come down to numbers. It costs substantially more money to pass a rural home with a telephone wire than it does to pass an urban home, and in some remote or mountainous regions the cost has sometimes proven prohibitive.

For this reason, the existing telecommunications infrastructure does not reach certain remote, less-populated or mountainous areas of this country. Local Internet service over these copper wires cannot be purchased in countless difficult-to-reach rural areas in the United States as easily and cheaply as it can be bought in New York City or Washington, DC. And advanced communications applications, such as tele-medicine services that can save lives, are simply not possible in numerous unserved areas around the nation.

Fortunately, basic telephone services are available to the vast majority of Americans -- which is not the case for the rest of the world. But almost everywhere, the existing copper-based infrastructure cannot adequately support advanced broadband data communications, one of the fastest growing segments of the telecommunications industry. To be sure, massive improvements are being made to the existing terrestrial infrastructure, such as fiber optic networks, ISDN services and other digital upgrades, which are designed to improve the network for voice communications and to create the bandwidth necessary for the so-called information superhighway. Such improvements, however, have not yet made their way to many small businesses and residents, even in most major metropolitan areas, let alone to the rural or remote communities of our nation.

Given the current pace, cost, and difficulty of these expansions and improvements, the stark reality is that an acceptable grade and quantity of terrestrial, wire-based communications bandwidth may never be available to currently unserved regions -- and in any event, certainly not on a widespread basis. Even in areas that now have some, but inadequate, access to the existing network, the expansion of the available terrestrial bandwidth to accommodate

advanced data communications may take decades.

I believe America should ensure that every citizen, wherever he or she is, can have a high-speed on-ramp to the information superhighway, to take advantage of the shift from the Industrial Age to the new Information Age. Among other things, by moving in this direction, we will be ensuring that every citizen can choose where to live and where to work -- without that choice depending on whether he or she will have access to the information superhighway.

The fact that some people have a somewhat peculiar view of what "choice" is all about reminds me of the time, not too long ago, when I was driving through the great state of Texas. I drove by a roadside diner that had a big sign announcing "Texas BBQ + choice of vegetables: \$9.95." I drove in, sat down and ordered my steak medium-rare. The waitress then told me that that day's vegetable was creamed corn. When I asked what was the choice, she replied "Do you want 'em or not?"

Now that's not my idea of choice. America should aim to give every citizen a choice of service providers, wherever possible, because choice and diversity is what has made this country strong. Choice in this economy generally means competition (which, by the way, is why there have been some not-too-subtle complaints heard from current players about the arrival of these new satellite technologies); I would suggest, however, that choice is very much in the public interest.

I am here to talk about one solution to this problem that promises to bring about geographic nondiscrimination and to provide everyone with greater choice. Indeed, our company and others like it are risking billions of dollars in capital to realize this promise. The solution we are proposing is very near at hand and will make available to all Americans, in all parts of the country

-- in areas urban or remote, flat or mountainous, icy or arid -- equal access to advanced communications service. This giant leap forward is being brought about by satellite technology, such as that being pioneered by my company.

While terrestrial networks discriminate geographically, the sky does not. A copper or fiber optic network has to be painstakingly and expensively installed along every route-mile, over or through every intervening mountain or valley, into every single home, business, school, library or hospital. But a constellation of satellites can provide the very same communications bandwidth to all rural, remote, mountainous, and sparsely populated areas that it provides to New York, San Francisco, and Chicago. Satellites can simultaneously and without much localized effort provide the same grade of service and capacity to Ethiopia, Peru, Siberia and Indonesia as they provide to Britain, Japan and Canada. This communications bandwidth can effortlessly extend to the tops of mountains, the bottom of valleys, the middle of deserts, the center of oceans, to the same extent that it is available in Times Square, Beverly Hills, and Monaco.

With such technology, a farmer in the Midwest will be able to sign up for lightening speed Internet service to enable him to check grain prices, identify potential buyers, sell his wares, and even read the New York Times, in the same way as a banker in New York will be able to sign up for Internet service to track stock prices for her portfolio.

A doctor in a remote town can have immediate access to communications infrastructure that will allow him to transmit x-rays and live video feeds of his sick patient during a teleconference with a team of specialists in Los Angeles, and can be guided in conducting a complex operation, as if the L.A.

doctors were in the room peering right over his shoulders.

As another an example, small rural colleges would gain access to communications channels that will allow them to participate live in lectures being conducted at larger universities around the country. And teachers in local high schools in hard-to-reach areas will be able to disseminate assignments, reading materials, and interactive multimedia presentations to those students who cannot make the tough journey, and to other students during storms or other weather conditions that make traveling to school impossible.

This technology will also be available to all users -- in all locations and with the same quality of service -- from day one of a satellite system's operation. Once the satellites of a SkyBridge-type system are in orbit, they provide immediate global coverage -- and will provide services that are just as accessible in a remote area with one user, as in an urban metropolis with over a million users. Unlike a terrestrial system, in other words, we are not talking here of an incremental buildout over many years, but rather of "instant infrastructure" for everyone from the outset.

There are thus a vast range of benefits that global satellite technology will bring to all areas of this country and the rest of the world. And these benefits can be brought about without replacing the existing wire-based infrastructure. Indeed, SkyBridge and other similar systems can only work as an extension of the public telephone system. SkyBridge will be entirely dependent upon national and international fiber optic back-bone networks. These satellite systems will create access to the network for geographic areas not reached by it today, and simply provide "last-mile" connectivity to remote locations, thus preserving the huge financial investments that have already been made in existing terrestrial networks.

I truly believe that satellite technology promises to make the next

century one in which the information superhighway can become more than just a concept or an ideal. Instead, it will be made into reality for the millions of Americans living in rural, high-cost, hard-to-reach, sparsely populated, and geographically unfriendly areas, all of whom will realize enormous economic, quality-of-life, and educational benefits from equal access to infrastructure for advanced communication. Rather than feeling pressured to migrate to the cities to participate in the information revolution, these citizens will suddenly have access to services unimaginable just a few years ago.

## **II. Promotion of Competition and Universal Service**

Not only will global satellite telecommunications technology improve the well-being of all citizens and increase the success of businesses; such technologies will also go a long way in fostering full-blown competition in the local and long distance telephone markets in the United States, and with respect to the U.S. portion of the Internet backbone. Such technology will also help bring about universal service, as dictated by the Telecommunications Act of 1996.

At the heart of the far-reaching '96 Act was the fundamental objective of promoting competitive telecommunications services in the United States. The '96 Act promised to usher in a world of competitive local and long-distance offerings, as well as universal service. Unfortunately, establishing competition has proven more difficult than expected in an industry where, in most geographic areas, one monopoly owns almost all of the wires going into the homes and businesses. The conventional wisdom these days appears to be that the '96 Act is failing.

But the Act need not fail. With respect to local competition, global



satellite technology promises an ideal alternative to the traditional "last mile" of the local loop. By creating instant bandwidth that is easily accessible from any point on the globe, while still being connected to the public switched network, a satellite network can help to infuse competition by transmitting local voice and data communications from any home to the facilities of any local exchange carrier, incumbent or competitor alike. By breaking down the barrier to competition caused by the bottle-neck at the "last mile" of the local loop, satellite technology can help achieve the '96 Act's competition ideal.

Similarly, with regard to universal service, satellite technology is perhaps the most workable, soon-to-be-available way to turn universal service into a reality. Regardless of the amount of money contributed to the Universal Service Fund -- and by whom -- it is unlikely that these subsidies alone will make it feasible for carriers to provide the sorts of high speed, broadband services to certain remote, high-cost areas that are necessary for the residents of those areas to become full participants in the Information Age. A global satellite network can overcome inherent limitations of terrain and distance without additional infrastructure costs, thus making it possible to have service that is truly "universal."

### **III. A Final Observation - Spectrum Efficiency**

As the members of this Subcommittee know better than most, the radio-frequency spectrum is a resource limited by the laws of physics. It is this resource that enables satellite systems to bridge the gaps in the terrestrial infrastructure. Given the large number of different types of services and entities vying to use this resource -- microwave, paging, cellular, DTH TV, you name it -- it is necessary for the government to administer this asset in a manner that benefits all segments of the public. SkyBridge, in an effort to maximize the efficiency with which this scarce resource is used, has proposed an efficient and

non-interfering protocol for sharing portions of the frequency spectrum already being used for other services. This proposal represents a forward-looking attempt by one company to use technological innovation to provide global access to advanced informational services, while assuring full continuity of all existing services.

Government support for such technological advancements will help to take us full-speed into the 21st century, and will bring about an information superhighway with the potential for entrance and exit ramps into virtually every house, cottage, hut, igloo, tent, business, school, college, hospital, clinic, government office or other structure in the United States and on the rest of planet. This Congress has already recognized the great importance of advanced telecommunications technology for the creation of broadband communications infrastructure. In Section 706 of the Telecommunications Act of 1996, Congress directed the FCC to take steps during this year to "accelerate deployment" "to all Americans" of "high speed, switched, broadband telecommunications capability that enables users to originate and receive high quality voice, data, graphics, and video telecommunications using any technology." SkyBridge stands ready to help fulfill this mandate.

### **Conclusion**

The changes taking place in the telecommunications industry are nothing short of breathtaking. Likewise, in an equally exciting but less visible way, the satellite industry is going through a radical transformation. Creating the best legal and regulatory environment to favor these simultaneous developments will not be easy. But satellite companies can and will make an enormous contribution to achieving the ideals of competition, universal service, and

spectrum efficiency. We will create the expanded bandwidth, higher quality, readily and universally available communications channels being demanded by businesses and individuals. By using innovative satellite technologies such as that being developed by SkyBridge, our companies will provide instant global bandwidth for advanced communications, thus making the information superhighway accessible not just to major urban areas, but to all locations in all parts of this country and the rest of the world.